DOCUMENT RESUME

ED 365 691 TM 020 855

AUTHOR Cohen, Michael P.
TITLE [Displaying Education Data to Managers and Policy Makers.]
INSTITUTION National Center for Education Statistics (ED), Washington, DC.
PUB DATE Oct 93
NOTE 3p.; Discussion from the Annual Meeting of the American Statistical Association (San Francisco, CA, October 1993). Comments on presentations by Herbert Lacayo and Brand Niemann.
PUB TYPE Viewpoints (Opinion/Position Papers, Essays, etc.) (120) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Administrators; Confidentiality; Elementary Secondary Education; *Environment; Environmental Research; Higher Education; *Information Dissemination; Management Information Systems; National Surveys; *Policy Formation; *Research Reports; Sampling; School Administration; *Technological Advancement
IDENTIFIERS *Data Display; *Educational Indicators; National Center for Education Statistics

ABSTRACT

Some approaches to displaying education data to managers and policy makers that may be pertinent to environmental data as well are discussed. The National Center for Education Statistics produces many publications each year, including "The Digest of Education Statistics," "The Condition of Education Statistics," and "Projections of Education Statistics." Similar publications can be imagined for environmental data, including the same sorts of indicators to present key features. Issues that will have to be considered in preparing an indicator series on the environment would be: (1) whether confidentiality is a factor in the design of the data system; (2) whether data are collected by sample surveys; (3) how subject-matter specialists fit in; and (4) whether the suggested approach is so "exotic" as to require justification. The previous presentations have shown that better methods for displaying data are needed, and that tools are available to develop them. Two figures illustrate the discussion. (SLD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
MICHAEL P. COHEN
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC).

ED 365 691

DISCUSSION

Michael P. Cohen, National Center for Education Statistics*
555 New Jersey Avenue NW, Washington DC 20208-5654

KEY WORDS: Display, data, information, graphics

Introduction

In addressing the topic of displaying of environmental data for management, the presenters, Herbert "Pepi" Lacayo and Brand Niemann, have identified a real need and charted a thoughtful and imaginative course towards meeting this need. In this discussion, I shall very briefly describe some approaches to displaying *education* data to managers and policy makers that perhaps may be pertinent for environmental data as well. I then pose some questions for consideration.

Displaying Education Data

The National Center for Education Statistics (NCES) produces numerous publications each year. Among them are three "flagship" publications:

1. *The Digest of Education Statistics*
2. *The Condition of Education Statistics*
3. *Projections of Education Statistics*

One can easily imagine an annual *Digest of Environmental Statistics*, *Condition of Environmental Statistics*, and *Projections of Environmental Statistics*.

NCES also has "software publications" available on diskette: *EdSearch*, containing the text of the Digest of Education Statistics, the Condition of Education Statistics, and additional data, with multi-colored graphics; and *Voc Ed on a Disk*, containing data on vocational education.

Indicators

I would like to preface my remarks on indicators with three quotations:

- "Data, data everywhere ..."
  (Herbert Lacayo)
- "Excellence in statistical graphics consists of complex ideas communicated with clarity, precision, and efficiency."
  (Brand Niemann, citing Edward Tufte)
- "Everything should be made as simple as possible, and no simpler."
  (Albert Einstein)

Indicators are a means to present key features (of, say, the environment) while still avoiding, as much as possible, oversimplification. *The Condition of Education* is a publication based around a series of indicators on the state of education (see Figure 2). A regularly produced indicator series on the environment, along the lines of Brand Niemann's illustrations, would seem to be of great value.

Some Questions

With the hope of provoking further discussion, I would like to pose some questions:

In the design of the data system, is confidentiality a factor? If there is a need to protect the confidentiality of the data provided by individual respondents, this protection must be built into the design of the data system.

Are data collected by sample surveys used? Special procedures must be implemented to handle sample survey data correctly, properly accounting for the survey weights, clustering, and stratification.

How do subject-matter specialists (toxicologists, etc.) fit in? The emphasis has been on the relationship between the statistician and the manager, but we really have a three-way relationship (Figure 1). Subject-matter specialists must be brought into the picture.

Is the suggested approach "exotic"? I thoroughly share the presenters' optimism about the potential for new software developments to

TM020855

BEST COPY AVAILABLE

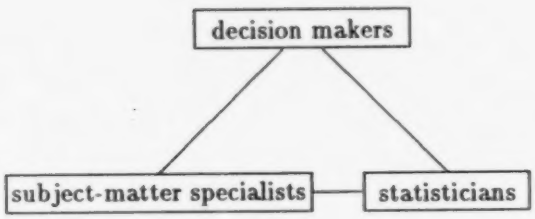

Figure 1: Diagram of Relationships

revolutionize data display, but when introducing new techniques, there is always a burden of proof that must be overcome. Additionally, it may be that there are users of environmental data that do not have easy access to up-to-data equipment.

Final Remarks

Herbert Lacayo has shown convincingly that better methods for displaying data for decision makers are needed. Brand Niemann has demonstrated, also convincingly, that tools are available today to allow the decision maker to explore and visualize the data. It will be exciting to revisit this topic in a few years.

---

*This paper is intended to promote the exchange of ideas among researchers and policy makers. The views are those of the discussant, and no official support by the U.S. Department of Education is intended or should be inferred.

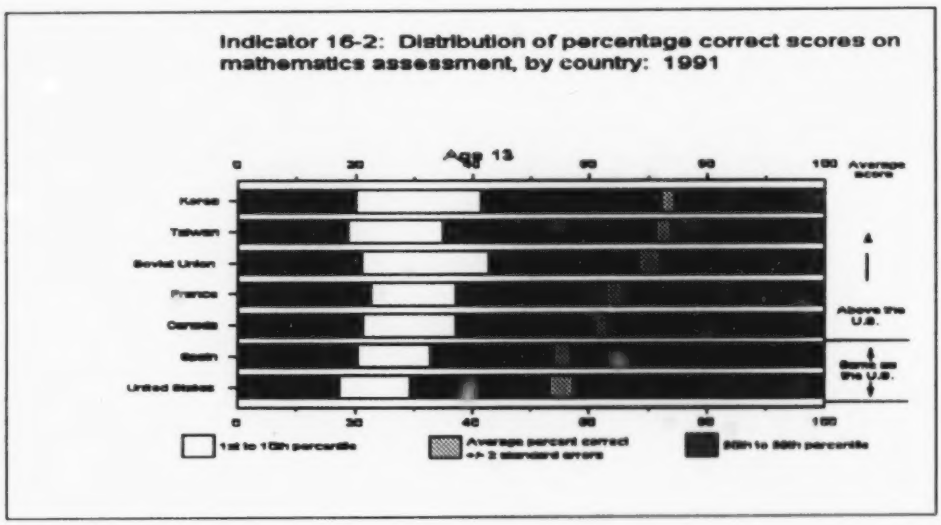
Indicator 16-2: Distribution of percentage correct scores on mathematics assessment, by country: 1991
Age 13
Average score
Above the U.S.
Same as the U.S.

Figure 2: Indicator 16–2 from the *Condition of Education 1992*, U.S Department of Education, National Center for Education Statistics